FOREST INSECT AND DISEASE CONDITIONS IN THE INTERMOUNTAIN STATES[1/] DURING 1976

CONDITIONS IN BRIEF

Bark beetle activity continued throughout the Intermountain States in 1976. Mountain pine beetle - caused mortality decrease Region-wide, but increased locally on portions of the Targhee National Forest, Idaho, and the Ashley National Forest, Utah.

Douglas-fir beetle caused tree mortality increased on the Boise, Salmon, and Sawtooth National Forests in Idaho. Fir engraver beetle activity associated with logging was observed on the Boise and Payette National Forests in Idaho. Western pine beetle mortality in second-growth ponderosa pine occurred on the Boise National Forest, Idaho.

Western spruce budworm infestations in Idaho and Wyoming have increased both in size and intensity. New defoliation was recorded in Douglas-fir and true fir stands on portions of the Boise and Payette National Forests in Idaho and on the Bridger-Teton National Forest in Wyoming.

Douglas-fir Tussock Moth populations caused light to moderate defoliation of Douglas-fir and subalpine fir stands in Oneida County, Idaho.

Western Tussock Moth activity caused defoliation of Ceanothus and other broadleaf species on the Boise National Forest.

The forest disease situation is little changed from 1975. The most important forest diseases in the Intermountain Region are the decays, root rots, and the dwarf mistletoes. These take a large yearly toll, yet go largely unnoticed, because of their ever present nature.

BARK BEETLES

Douglas-fir Beetle, Dendroctonus pseudotsugae Hopk

Douglas-fir beetle caused tree mortality was recorded on all Region 4 National Forests in Idaho and Wyoming during 1976. The heaviest infestation occurred in the South Fork of the Payette River in the Boise National Forest from Lowman to Grandjean. The tree killing on the Sawtooth National Forest increased on the Fairfield Ranger District

1/ Includes forested lands in Utah, Nevada, Southern Idaho, Western Wyoming and Eastern California.

from Featherville to Big Smokey Guard Station. Heavy mortality occurred in portions of the Big Water Creek, Little Water Creek and Willow Creek drainages that had been defoliated by the Douglas-fir tussock moth in 1973 and 1974. Bark beetle activity continued along the main Salmon River and in Panther Creek. Mortality on the Challis National Forest was recorded along the Salmon River from Stanley to Clayton. The Payette National Forest infestation on the Council Ranger District are static to decreasing. Scattered mortality occurred throughout the Targhee National Forest from the Montana-Idaho border south to Alpine Junction. On the Bridger-Teton fading Douglas-fir trees are visible from the Jackson Hole ski area south for 12 miles to Mosquito Creek. Elsewhere in the Region, activity has decreased.

Mountain pine beetle, Dendroctonus ponderosae Hopk.

The mountain pine beetle remained the most damaging insect in the Region during 1976. The overall trend of the insect throughout the Region has been decreasing for the past few years; however, several acreas are still experiencing heavy mortality.

The largest and most damaging infestation is located on the northern portion of the Targhee Nationl Forest, Idaho. In the Island Park area the number of new attacks per acre increased from 20 in 1975 to 30 in 1976, and near Sawtell Peak the increase was from 10 to 20. On the Moose Creek Plateau mortality continues but at a much lower rate. Extensive timber harvesting in this area has utilized much of the threatened timber.

A preventive spray pilot study was conducted in stands along the lower Sawtell Peak road on the Targhee National Forest in 1976. This study was essentially the same as was done in 1975 except that water formulated sprays were used rather than oil. Three chemicals, Lindane, carbaryl (Sevimol-4), and Dursban, were tested at a 2 percent concentration by weight. The study included applying an average of two gallons of each chemical on 100 lodgepole pine trees to a height of 25 feet. Preliminary results indicate a protection level ranging from 23 percent to 98 percent for Dursban and Sevimol-4, respectively. Lindane provided 76 percent protection. Additional tests are being considered for 1977.

Increased bark beetle activity occurred on the Ashley National Forest, Utah. A marked increase in 1976 new attacks was recorded in lodgepole pine type at several locations east of Charley's Park and in the vicinity of Red Cloud Loop north of Vernal. In ponderosa pine type, accellerated tree killing occurred at several locations in the vicinity of Greendale Junction on the west side of Flaming Gorge.

The infestations on the Cassia Division of the Sawtooth National Forest in Southern Idaho appear to be declining after killing nearly one-third of an estimated 384mm board feet of standing lodgepole pine. Annual loses now appear to be occurring at a decreasing annual rate.

Mortality in second growth ponderosa pine stands caused by mountain pine beetle occurred on the Dixie National Forest in Utah. The largest infestations were recorded in the Table Cliff area near Pine Lake, in Water Canyon and Cherry Hollow near Green Guard Station; and throughout the Aquarius Plateau from North Creek to Bear Creek.

Mortality of Jeffrey pine continued in many widely scattered locations on the Toiyabe National Forest, California. The heaviest concentration occurred south of Lake Tahoe in the Grovers Hot Springs and Markleeville areas and in the East Fork of the Carson River.

Elsewhere in the Region, mountain pine beetle mortality was recorded on the Boise, Payette, and Caribou National Forests in Idaho; on the Bridger-Teton National Forest in Wyoming, and the Cache and Wasatch National Forests in Utah.

Pine Engraver Beetle, IPS pini (Say.)

Pine engraver caused mortality was again observed in an area east of Bogus Basin which has had chronic ips infestations for the past six years. Elsewhere, ips activity was recorded in several timber sale areas on the Payette and Boise National Forests.

Spruce Beetle, Dendroctonus rufipennis (Kirby)

Spruce beetle continued at a very low level throughout the Intermountain Region last year. The heaviest mortality recorded was in Huntington Canyon on the Manti-LaSal National Forest in Utah. Ground surveys indicate that populations are declining following a recent outbreak in this area.

Western Pine Beetle, Dendroctonus brevicomis (LeC)

Western pine beetle infestations in second-growth ponderosa pine stands continued on portions of the Boise and Payette National Forsts, Idaho. The heaviest damage occurred in overstocked pole to young saw timber stands in the vicinity of Sagehen Reservoir on the Emmett Ranger District, Boise National Forest.

DEFOLIATORS

Douglas-fir Tussock moth, Orgyia pseudotsugata McD.

Light to moderate defolation of Douglas-fir and subalpine fir was observed on about 10,000 acres of mixed ownership in the Boulder Creek, Sinker Creek, and Jordan Creek drainages, Owyhee County, Idaho.

Ground sampling in early July revealed a high incidence of polyhedral virus in larval populations. The results of a fall egg mass survey indicate that larval populations will be low in 1977.

Use of the Douglas-fir tussock moth sex attractant to determine the geographic distribution of the insect in the Intermountain Region in 1976 resulted in the detection of 22 male moths from 43 trapping sites on 12 National Forests. Forests on which one or more moths were detected include the Boise, Challis, Payette, Sawtooth and Targhee National Forests in Idaho and the Manti-LaSal, Uinta and Wasatch National Forests in Utah. Additional trapping will again be done in 1977 to more fully determine the distribution of this forest defoliator in Region 4.

Fall Cankerworm Alsophila pometaria (Harris)

Moderate to heavy defoliation caused by the fall cankerworm has again been reported in lower Corn Creek, Fishlake National Forest, Utah and along the Wasatch Front between Ogden and Salt Lake City, Utah. The heaviest defoliation is occurring on box elder and gambel oak with only light to moderate defoliation on big tooth maple and choke cherry. No permanent damage has been observed following three years of consecutive defoliation in either area. The trend of these outbreaks is unknown.

Western Spruce Budworm, Choristoneura occidentalis Freeman

Defoliation caused by the western spruce budworm was recorded on slightly more than a million acres of Douglas-fir and true fir type in Idaho and Wyoming during 1976 aerial surveys. The majority of the defoliation, including the oldest and heaviest concentrations of damage, occurred on the Payette, Boise, Salmon and Chalis National Forests in Idaho. Defoliation on the Payette National Forest, totaling about 810,000 acres, increased in the South Fork of the Salmon River, in areas west of Cascade Reservoir, and in the Boulder Creek drainage northwest of McCall, Idaho. The Brundage Mountain area north of McCall was defoliated again in 1976. Light to heavy defoliation, on the Boise National Forest occurring over about 98,000 acres, extends below Sagehen Reservoir and was recorded for the first time in areas southeast of Cascade Reservoir. Defoliation on the Salmon National Forest occurred in the upper Yellow Jacket drainage and in Shovel Creek.

Light to heavy defoliation, amounting to about 40,000 acres, occurred at three locations on the Targhee National Forest in Idaho and Wyoming. This included approximately 22,000 acres of Douglas-fir type on the south slopes of the Centennial Mountain near Spencer, Idaho; 5300 acres of Douglas-fir and subalpine fir type along the west side of Henry's Lake extending from Reynolds Pass south to Squaw Pass; and 12,000 acres of mixed type in the Snake River Canyon extending eastward from Ferry Peak to Wolf Mountain.

Defoliation on the Bridger-Teton, amounting to about 112,000 acres, increased in both extent and intensity this year. Current infestation centers include a 59,000 acre area extending from the Jackson Hole Elk Refuge south 25 miles to the headwaters of Willow Creek and portions of the lower Hoback, lower Greys and most of the Little Greys drainages encompassing about 53,000 acres.

During the spring of 1976 the weather was considerably cooler and wetter than normal. This condition probably had some adverse affect on larval survival. However, the results of the 1976 egg mass survey indicate that populations will be high enough to cause light to heavy defoliation in most areas again in 1977.

The results of stand hazard evaluations on the Boise, Payette, Targhee, and Bridger-Teton National Forests indicate that no mortality of overstory trees has yet occurred.

Cumulative damage, resulting in some top-killing of intermediate and suppressed overstory trees and scattered mortality in trees less than 5" DBH, is not considered significant enough to warrant direct control in 1977.

Western Tussock Moth, Orygia vetusta gulosa (Hy. Edwards)

Defoliation of ceanothus and other broad leaf species by western tussock moth occurred on the Idaho City and Lowman Ranger Districts, Boise National Forest. Defoliation of ponderosa saplings was observed in a ponderosa plantation which contained infested ceanothus ground cover.

White Fir Needle Miner, Epinotia meritana heinrich

Light to heavy defoliation of white fir occurred over approximately 3400 acres in several locations on the Dixie National Forest adjacent to Bryce Canyon National Park along the East Fork of the Sevier River. The trend of this infestation is unknown.

SUCKING INSECTS

Black Pine-Leaf Scale, Aspidiotus californicus Coleman

A 400-acre ponderosa pine stand on prive land near Genoa, Nevada continued to be heavily infested for the third year. Repeated infestation has resulted in scattered tree mortality and numerous top and branch killing of individual trees. The results of population monitoring in May-July of 1976 indicate a recovery in parasite populations following the termination of a malathion mosquito abatement program. Population sampling will be done again in the spring of 1977 to determine parasite population and host tree recovery. A growth impact evaluation will also be initiated at that time.

STEM DISEASES OF CONIFERS

Dwarf mistletoe, Arceuthobium cryptopodum Engelm

In FY 1976 the Charter Mountain dwarf mistletoe suppression project on the Emmett Ranger District of the Boise National Forest was completed. The final phase consisted of selling merchantable infected ponderosa pine and felling, lopping, and scattering the remaining smaller trees.

Direct control, consisting of cull tree removal and sanitation thinning of advanced regeneration, is expected to increase throughout the Intermountain States.

A Stem Canker, Cytospora spp

A stem canker caused by a Cytospora fungus was observed at several locations on the Escalante Ranger District, Dixie National Forest in Southern Utah. Limb girdling, top-killing, and scattered tree mortality was commonly observed on white fir in dry site situations.

Broom Rust on Subalpine Fir, Melampsorela caryophyllacearum Schroet

Broom rust caused by this organism was observed on state forest lands near Swan Lake, Idaho during post-sale examinations on the Cottonwood Management Unit. The results of these examinations indicate that many residual trees are seriously infected with this rust and will die before the next scheduled entry.

ROOT DISEASES OF CONIFERS

Fomes Root Disease, Fomes annosus (fr.) cke.

The number of forest stands known to be infested by this root disease continues to increase. Detection surveys in 1976 revealed many new infection centers on the Boise, Payette, and Salmon National Forests in Idaho. Nearly all of these new centers were located in areas where logging operations had been conducted during the past 15 years.

A more complete examination of second growth Ponderosa pine stands within the Region is being planned for 1977. The objective of this survey is to more fully determine distribution and obtain information concerning Regional impact.

POLLUTION DAMAGE

Broad-leafed and conifer vegetation around the Navajo Generating Station at Page, Arizona, and the Huntington Canyon Generating Station south of Price, Utah, was examined for damage caused by release of SO_2 gas. No damage attributed to the effects of SO_2 has been found following two and one-half years of exposure. No additional monitoring will be conducted unless damage is reported. Color photographs of all plant species are on file.

VASCULAR WILT DISEASE

Dutch Elm Disease, Ceratocystis ulm. (Buisman) C Moreau

This disease was not reported from any new locations in 1975. The disease has previously been detected in Ada, Canyon and Payette counties in Idaho.